DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007057
Date Inspected: 03-Jun-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1400
OSM Departure Time: 2230
Location: Clackamas, Oregon

CWI Name:	Steve Barnett			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

On this date, Caltrans Quality Assurance Inspector (QA) Sherri Brannon is present at the Oregon Iron Works, Inc. (OIW) jobsite in Clackamas, Oregon for the purpose of observing fabrication of the Hinge K Pipe Beams.

OIW Fabrication Shop-Bay 3 (repair CWR-2244-003R1):
QA Inspector Brannon observed OIW welder Mikhail Bannikov ID#B28 preheating and repair welding CWR-2244-003R11. Hinge K pipe beam section MK#a111-1 (A508 Gr. 4NClass 2) joining hinge K pipe beam section MK#a110-1 for hinge K pipe beam base sub assembly section MK#102A-1. The complete joint penetration (CJP) weld is identified as weld joint #W2-13. Mr. Bannikov was observed welding in the 3G (vertical) position utilizing flux cored arc welding (FCAW) process with a 1.3mm diameter electrode, filler metal brand Select Arc class E91T1-Ni1C-H4 semi-automatic. QA Inspector Brannon observed the OIW QC CWI Inspector Mr. Steve Barnett verifying that the pre-heat and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS 3048 revision number 1. After completion of the repair QA observed Mr. Bannikov and Mr. Barnett using a flame torch to maintain heat on the repair as required per OIW CWR-2244-003R1 repair procedure for the post weld heat treatment (PWHT). OIW maintained the PWHT between 230°C and 315°C for 2 hours as required.

OIW Fabrication Shop-Bay 3 (sub-assembly):
QA Inspector Brannon randomly observed OIW qualified welder's Mr. Liam Bui ID#B10 and Mr. Yuriy Bannikov ID#B61 welding fill pass's joining stiffener ring MK #b125 (HPS 485 W) to hinge K pipe beam half section MK#a124-5 (HPS 485 W). The partial joint penetration (PJP) groove weld is identified as weld joint

#WM3-02. Mr. Bui and Mr. Bannikov was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector Mr. Steve Barnett verifying that the pre-heat of 350°F and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured by QA are as follows for fill: 582 amps, 34.9 volts and a travel speed of 457mm per minute respectively appear to be in conformance with approved welding procedure specification WPS 4020 revision number 1.

OIW Fabrication Shop-Bay 3 (sub-assembly):
QA Inspector Brannon randomly observed OIW qualified welder's Phoung Huynh ID#H4 welding joining hinge K pipe beam half section MK#a124-1 (HPS 485 W) to hinge K pipe beam half section MK#a124-9 (HPS 485 W) for sub assembly MK#120A-6. The complete joint penetration (PJP) groove weld is identified as weld joint #WM3-18. Mr. Huynh was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector Mr. Steve Barnett verifying that the pre-heat of 350°F and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured by QA are as follows: 585 amps, 33.5 volts and a travel speed of 457mm per minute appear to be in conformance with approved welding procedure specification WPS 4020 revision number 1.

OIW Fabrication Shop-Bay 3 (sub-assembly):
QA Inspector Brannon observed no production activity on Hinge K Pipe Beam sub assemblies noted below for the duration of the shift.
Hinge-K Pipe Beam Sub Assembly, MK#102A-4 - MK#a111-4 forging to MK#a110-4 base plate idle.
Hinge-K Pipe Beam Sub Assembly, MK#120A-2 – MK#a124-3 half fuse to MK#a124-11 half fuse.
Hinge-K Pipe Beam Sub Assembly, half fuse section MK#a124-15.

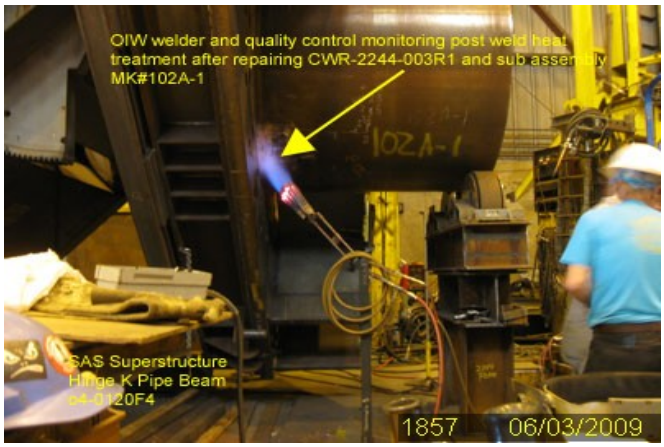
OIW Fabrication Shop-Bay 6 (sub-assembly):
QA Inspector Brannon randomly observed OIW qualified welder's Mr. Bounheune Savanh ID#S74 and Vincent Vu ID#V7 welding soudotape 316L stainless steel overlay to hinge k pipe beam fuse sub-assembly 120A-3. The weld joint is identified as 316L 2nd layer. Mr. Savanh and Mr. Vu was observed welding in the flat position utilizing automatic electro slag welding (ESW) overlay process with a .5mm x 60mm soudotape 309L stainless electrode, filler metal brand Soudotape class EQ316L automatic. QA Inspector Brannon observed the OIW QC CWI Inspector Mr. Steve Barnett verifying that the pre-heat of 20°C and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters observed by QA Inspector Brannon are as follows: 1140 amps, 24.8 volts and a travel speed of 267mm per minute appear to be in conformance with approved welding procedure specification (WPS 7003) revision number 0. Electro slag welding (ESW) overlay for the 1st lay of 309L completed today.

OIW Storage Yard
Hinge-K Pipe Beam Sub Assembly, MK#102A-2 - MK#a111-2 forging to MK#a110-2 base plate idle.
Hinge-K Pipe Beam Sub Assembly, MK#102A-3 - MK#a111-3 forging to MK#a110-3 base plate idle.
Note: QA Inspector Brannon also, observed pending repairs for MK#102A-2 weld joint W2-13 and MK#102A-3 weld joint W2-13 both have pending 1st time UT repairs.

Caltrans Status and Production Tracking:
QA Inspector Brannon also updated Caltrans status and production tracking logs for tracking of check samples, procedure qualification record (PQR), critical weld repairs (CWR), non-critical welding repairs (WRR), completed and in process welding, QC/QA non-destructive testing.

Material, Equipment, and Labor Tracking:
QA Inspector Brannon performed a verification of personnel at OIW. QA Inspector Brannon observed 1 Supervisor, 1 Quality Control and 5 production personnel on this date.

The following digital photograph below illustrates observation of the activities being performed.



Summary of Conversations:
As noted within this reprot.

Comments
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Brannon,Sherri	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer